

A Thirst for Knowledge



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PHOTOS BY **PHILLIP DAVIS**



Students at Uwemba Primary School get daily doses of calcium and protein as part of the School Milk Program.



Nyumbanitu Primary students take their morning milk break.

Schoolchildren in Tanzania's Southern Highlands get regular helpings of milk as part of a new Heifer project, and parents and teachers marvel at the instantaneous boost to health, concentration, energy and attendance. Now, Heifer International hopes to expand the project so all children in the region can thrive.

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NJOMBE, TANZANIA — It's not clear if it's the sweet taste of milk that lures 7-year-old Izabela Sambanae up the hill to school each morning, or if the daily protein boost to her otherwise starchy diet simply gives her enough energy to wake up early and get going. Regardless, the pouches of cold, fresh milk Izabela and other students at Itunduma Primary School drink each morning are fueling soaring attendance rates, better concentration in class and improved health all around.

The benefits were immediate when Heifer International's School



Girls arrive for school at Itunduma.



Izabela takes some sweet potatoes to go from her mom, Justina Mgimbadzu, while little brother Musa snacks.



Izabela is strong enough to pick up her brother.

Milk Program launched in July 2017, Izabela's mom, Justina Mgimbadzu, reports. The daughter who used to sleep in or skip school altogether now wakes herself and darts up the hill to Itunduma Primary without being asked. Tiny Izabela's newfound strength is evident when she hoists her 2-year-old brother Musa, who is possibly heavier than she is, on to her



Students get out their energy before returning to class.



Students break from classes at 10 a.m. to drink milk.

A daily glass of milk is a treat that few families here have the means to provide.



Izabela says her daily pouch of milk is a sweet treat.

lap. Izabela's grades are among the best in her class, and she's feeling confident about her school work. The milk, she said, "gives me energy to listen to the teacher and answer questions, and to write."

Izabela's family of four lives in two church van-sized buildings, one made of adobe walls and thatched with grass, the other of mud brick with a metal roof. The small, squat buildings bracket a packed-dirt courtyard shaded by a mulberry tree, and rows of crops surround the modest homestead. Farming the adjacent acre of land yields enough maize and sweet potatoes for the family, but no more. The skinny white sweet potatoes, boiled in their skins, pass for lunch most days, and Izabela sometimes pops a few into her pockets in case she needs a snack. This bare-bones lifestyle is common in the region, and Izabela's low-nutrient, low-energy diet is typical among her classmates. A daily glass of milk is a treat that few families here have the means to provide.

"We're thankful for the milk being

supplied," Mgimbadzu said. "Izabela has better health and more energy."

And it's not just children drinking the milk who benefit from this project. This new program takes aim at two challenges at once, attacking malnutrition while also helping dairy farmers cultivate new markets. As the health and energy levels of local children improve, so does the local economy, thanks to this strengthening connection between dairy farmers who need customers and children whose bodies are thirsty for calcium and protein. Glowing testimonials from the children, parents and teachers benefitting from the School Milk Program become the best possible advertisements for dairy farmers looking to expand their customer base.

But the ending to this promising story is still to be written.

The smash success of Heifer's School Milk Program in southern Tanzania is bittersweet, throwing into stark relief the differences between the children thriving thanks to daily doses of calcium and protein and those who aren't yet included in the project.



Deborah Njombe started out with one cow and now has five.



Dairy farmers Castor Obed Fisima and his mom, Deborah Njombe, load the day's milk for delivery.

MILK=MONEY

Drinking and selling milk is not new in Tanzania's Southern Highlands, where families who kept cows have long made extra money by selling a pint or two to neighbors or passersby. In recent years, though, the market changed drastically as more customers sought out the safety of pasteurized milk and convenient ways to buy it.

Still, the nutritional benefits of dairy are considered a luxury in poor neighborhoods. "We all want to drink milk, but it is not

common for us. Only a few here are cattle farmers, and we mostly cannot afford to buy milk for the family," said Edson Joseph Msigwa, a father of three who indulges his children with their favorite treats of rice and milk when he can afford to. As a farmer of chickens, pigs, sweet potatoes and maize, Msigwa said buying a cow would cost more than he makes in a year.

Heifer International teamed up with other development organizations to launch the East Africa Dairy Development project



Any milk that comes in at the Njombe Milk Factory undergoes testing to make sure it's fresh and pure.



Raw provolone gets molded into cylinders before aging.

TANZANIA'S LITTLE ITALY

Who knew that some of the tastiest asiago cheese you can find is made in the Southern Highlands of Tanzania? The Italian NGO Cefe opened the Njombe Milk Factory in 2005, and Italian cheesemakers moved in to share equipment and training with local workers. The Italian cheesemakers are gone now, but local factory workers still produce 22 varieties of Italian cheeses, along with pasteurized milk and yogurt.

Today, the Njombe Milk Factory is a cooperative serving roughly 700 farmers. Once processed and packaged, the dairy products made here go out to schools and markets. A "milk bar" in the commercial section of Njombe town serves up pitchers of the factory's fresh strawberry and vanilla yogurt, and plenty of customers nip in for a liter or two of cold milk to go. The Italian cheeses are most popular with hotels that cater to foreign tourists.



Once it's pasteurized, the milk is packaged for students.



A lab at the milk factory allows workers to test for impurities.



Fastidious record-keeping ensures farmers and delivery workers are paid fairly.

Glowing testimonials from the children, parents and teachers benefitting from the school milk program become the best possible advertisements for dairy farmers looking to expand their customer base.



Customers stop in to the milk bar for yogurt to go.

in 2008. A five-year extension grant expanded the work to Tanzania's Southern Highlands in 2014.

The dairy hub model in Njombe is the same model being used at East Africa Dairy Development project sites in Kenya and Uganda, as well.

The small-scale dairy farmers participating in the East Africa Dairy Development project in and around Njombe keep meticulous books to track milk at every step to ensure quality, efficiency and economy. The farmers are adopting new production practices and technologies like improved veterinary care, artificial insemination and pasteurization, and the result is a better product in bigger quantities. Today, a fleet of vans, trucks and motorbikes collect fresh, raw milk from farmers daily, then deliver it to the Njombe Milk Factory. The factory staff of 21 workers clad in pristine white from head to toe churn out shipments of quality-tested pasteurized milk, yogurt and cheese.

Farmers who buy into this dairy cooperative model must pay their own delivery costs, and the factory

pays them only 660 Tanzanian shillings (about 30 cents US) per liter. That's significantly less than the 1,000 Tanzanian shillings (about 45 cents) per liter they could get selling the milk themselves. But farmers who sell to the factory get the benefit of having a steady, dependable buyer. Time the farmers would have spent trying to sell their milk can now go to making their farms more productive. And milk that goes through the factory is pasteurized, making it safer, more expensive and more appealing in this rapidly evolving market. The demand for milk has grown 7 percent a year in the region since the project began in 2008.

The School Milk Program is part of a sophisticated plan to make sure demand continues to grow by cultivating a new generation of customers. Students who get free milk at school are walking, talking testimonials to the benefits of dairy foods. As these students enjoy the good health and clear thinking they need to become successful and achieve some buying power of their own, a new generation of consumers is born.

The School Milk Program is just one small part of the East Africa Dairy Development (EADD) project, which spans three countries and benefits hundreds of thousands of farmers.

As EADD farmers in Tanzania's Southern Highlands produce more and more, they're able to provide daily helpings of nutrient- and energy-rich milk to local schoolchildren who would otherwise go without.

THE PILOT PHASE OF HEIFER'S SCHOOL MILK PROGRAM WILL SERVE

10,000

schoolchildren in grades kindergarten through fourth

3

regions of Tanzania: Iringa, Mbeya and Njombe



2008

The East Africa Dairy Development project launches to help dairy farmers in Uganda, Tanzania and Kenya. The Bill & Melinda Gates Foundation teams up with Heifer International, the International Livestock Research Institute, the World Agroforestry Centre and ABS to ensure the project's success.

EAST AFRICA DAIRY DEVELOPMENT PROJECT GOALS



Train farmers in good business practices



Help farmers secure the animals, training and equipment they need to thrive



Build a robust and reliable market for small-scale dairy farmers in East Africa

BETWEEN 2014 AND 2018, 35,000 TANZANIAN FARMERS

will achieve sustainable livelihoods, meaning they will make enough money to provide housing, clothing, healthcare and other basics for themselves and their families.



The school bell is an old truck wheel that clangs when a student hits it with a stick.



Teacher Faraja Mgaya is in charge of the milk program at her school.



Students wait to unload the daily milk delivery.



Fresh milk stays chilled for delivery.



Students await their daily milk break.

"A GOLDEN CHANCE"

A student whacks a rusty truck wheel with a stick in the courtyard of Itunduma Primary School each morning to announce the beginning of classes, and children in their red sweaters and blue skirts and slacks pour in from all directions. The Tanzanian government funds most of the costs of public schools, but students are responsible for their own uniforms. In poor communities like the one where Itunduma Primary is located, parents do their best to

provide frayed sweaters and tattered pants that are worn but clean. All students are expected to scrub their nails and keep their hair tidy and cropped close to their heads.

Itunduma teacher Faraja Mgaya oversees the milk program at her school, an extra duty she took on gladly in hopes of boosting her students' health and academic performance. "It was a golden chance," she said. And she's pleased with the results. The children are cleaner, more alert and in better

spirits. Attendance is up an average of 10 percent throughout the school since the milk program began, a boost that other schools participating in the milk project report as well.

A compact delivery truck plastered with cartoon milk ads putters up the dirt road to the school each morning around 10 a.m., and a team of the older students hauls coolers full of milk out of the back. Students hurry to get in line. "Most kids don't get any breakfast at home, the milk is the first thing they get each day," Mgaya said.



Teachers snip the corners of the airtight milk pouches.



Milk distribution is busy but organized.



Students wait in line for milk.

Lots of younger siblings forego their own helping of milk a couple of times a week to sneak it to older brothers and sisters who are aged out of the program.



Teacher Matrida Peter says students' health is visibly improved.

GLASS HALF-EMPTY

Not every student at the school got one of the 8-ounce pouches of milk when the program began. The initial phase served children only through grade 4 and Tanzania's primary schools typically go through grade 7, meaning the oldest students at these schools still went without. Lots of younger siblings sneaked their milk to older brothers and sisters who were aged out of the program. Sometimes,

teachers said, older children stole milk from younger ones. Teachers caught children pawing through the trash to suck the last dregs of milk from discarded packages.

Festo Kiswaga, a father of three whose children go to Uwemba Primary, counts on the milk and lunch provided at school to keep his children healthy. He and his wife eat two meals a day at their home, but on school days the children get



Students squeeze in for their morning lessons.



a third meal of makande, a stew of beans and maize that's long been the standard schoolyard meal. Kiswaga's youngest two children got a daily helping of milk, but his oldest, a fifth-grader, didn't qualify. So Kiswaga's middle child handed over his milk to the oldest twice a week. "It is not allowed, but we do it," he said.

To fix this problem, Heifer revamped the program to provide milk to all children at participating

schools, but only for four days a week, rather than five.

Cosmos Mfugale says he doesn't mind that the program was scaled back by one day a week because now more children benefit. "I can see a difference," he said. "If you look, you find that those who drink milk are good-looking students. Those who do not drink milk are not attractive in terms of skin complexion."

Tanzania's Southern Highlands

are plagued with a high rate of HIV infection, and children with the virus have elevated nutritional requirements. Matrida Peter, a math teacher who oversees the School Milk Program at Nyumbanitu Primary, said all of her students seem to have gained weight and vigor, but her HIV-positive students show the most improvement. "Their skin was dull and dry, but now their skin is shining," she said. ■

A QUESTION OF TASTE

Few of the children in Heifer Tanzania's School Milk Program have been lifelong milk drinkers. This is a region where many homes lack both electricity for refrigeration and enough money to buy milk. Dairy products simply haven't been a big part of the daily diet, especially among poorer families. "There are some children here who never tasted milk after breastfeeding," explained Cosmos Mfugale, a dairy farmer and father of three.

And so, before the project began, some people were skeptical. Without the ingrained culture and habit of daily milk drinking, would these children even want to drink milk?

It turns out those worries were unfounded. The program was an immediate hit, with universally rave reviews from the students. "I like it so much," said Francis Mlowe, a third grader at Uwemba Primary. "It tastes like sugar." Greyson Dennis, a student at Itunduma Primary, looks forward to his 10 a.m. milk break every day because, he said, "It's a treat, like a biscuit."

The biggest challenge, it turns out, is not what to do with unwanted milk, but instead how to meet the overwhelming demand. Children, teachers and parents are clamoring to see the project expand so more children can get a taste of the health-giving vitamins and minerals milk provides.



Single mom Fausta Miamba appreciates the help in making sure her two children eat a healthy diet.



Cosmos Mfugale is glad his son Christopher gets a daily dose of milk.



Violet Mhema with her son Noel Mlilo, who doesn't have to feel embarrassed anymore because the family can't afford milk at school.



Itunduma Primary students
enjoy their morning milk break.

FOR CHILDREN IN TANZANIA'S SOUTHERN HIGHLANDS, THE MOST IMPORTANT MEAL OF THE DAY ISN'T EVEN A MEAL.

Thanks to the new School Milk Program, 3,000 children get a nutritious morning snack of fresh, locally produced milk. **But thousands more children are still waiting.**

Help Heifer International expand our School Milk Program to provide good nutrition, improved health, glowing skin and a brighter future to children in need. Donate today.

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an entire school year.
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